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ABSTRACT

Academic achievement in males is quite consistently predictable from locus of control scores, although this is not true for females. Reasons suggested for this apparent inconsistency include the use of externality as a shield against failure, the instruments used and a "fear of success" in women. Several studies with college and elementary school students are reported. Results suggested a social desirability factor might be a mediating variable when predicting achievement from locus of control scores. (ST)

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PREDICTING ACADEMIC ACHIEVEMENT OF FEMALES FROM A LOCUS OF CONTROL ORIENTATION: SOME PROBLEMS AND SOME SOLUTIONS[1]

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As an impetus for research and an object of study, the construct of locus of control presently rivals all other aspects of social learning theory (SLT). A reviewer in England informed me that he has found nearly a thousand studies involving locus of control either as an independent or dependent variable. Al MacDonald (1973) stated that 40% of locus of control studies he referenced had been done during the last two years. The four major reviews (Rotter, 1966; Lefcourt, 1966, 1971; and Joe, 1971) indicate the wide range of behaviors to which locus of control has been related. The present paper will focus on one of these behaviors, academic achievement with a special emphasis on females. First, I will briefly review studies relating locus of control to academic achievement. It will be concluded from this brief review that males' academic achievement performance is more consistently predictable from locus of control scores than is females'. Some possible reasons for this apparent inconsistency shown by females will be presented. Lastly, some general comments will be made concerning the conceptual and methodological approach to locus of control research.

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The majority of studies relating locus of control orientation to academic achievement have used subjects of high school age or below (Crandall, Katkovsky & Crandall, 1965; Nowicki & Strickland, 1973). The results of studies using these younger subjects has consistently shown internality relating positively to greater academic achievement, for males. Females just have not shown this relation as consistently. At times internal females achieve more than others, at times they do not.

When we look at college aged subjects we find a relative paucity of studies relating locus of control to academic achievement. Though some studies have shown internality related to academic achievement others have not; and when sex of the subject is included as a variable the inconsistent performance of females associated with the younger subjects is found (Brown, & Strickland, 1971; Nowicki & Duke, 1973). Since predicting academic achievement performance from a locus of control base is such a viable and important research task, I am left with the uncomfortable feeling that a number of studies may have been done, resulting in nonsignificant results, and have not been reported.

Rotter (1966) has offered at least two reasons why the achievement-locus of control relation might not occur. One is that, among college males, there may be defensive externals or students who were originally competitive, but who use externality as a shield against failure. The second is that "internal-external control attitudes are obviously not generalized across the board and in the highly structured academic achievement situation there is probably more specificity determining responses than in other kinds of situation (p. 4)."

A third possible reason for the lack of consistency for females may be in the measuring instruments themselves. In terms of adults, Rotter's

scale has been used almost exclusively. It may be that there are some properties of the Rotter scale which contribute to the inconsistent prediction of academic achievement behavior in college aged subjects.

Rotter I-E scores have shown a consistent and significant relationship to social desirability responding and to the denial of psychopathology. And, Rotter I-E items have been found to include personal, social, political, and ideological causation. Nowicki and Duke (1973) have presented a new scale for adults, the Nowicki-Strickland locus of control scale (ANSIE) which is a parallel form of the children's Nowicki-Strickland scale--CNSIE (Nowicki & Strickland, 1973). The scale was constructed to be readable for a wide range of subjects and to control the effects of social desirability.

To compare the performance of these two scales, twenty-two males and 26 females (juniors in a medium sized university in the southeastern United States) were asked to complete both the Rotter and ANSIE scales; grade point average and SAT scores were obtained from school records.

Data were analyzed via correlational procedures and the results showed that the scores on neither measure were related to a more general measure of aptitude, SAT scores (Rotter, r = -.10 and .00, ANSIE, r = -.01 and -.15). The hypothesized relation for locus of control and achievement was supported for males with the ANSIE but for neither males nor females with the Rotter scale. That is, internality for males was positively related to achievement when ANSIE scores are used as a measure of locus of control (r = -.50, $p < .02$). In addition, it was also found that externality on the ANSIE was significantly related to achievement for females (r = .39, $p < .05$), which is consistent with a cultural role interpretation. This

suggests that college-aged females are more likely than males to adopt an expressed external orientation to be congruent with the expected female cultural role of passivity. Expressing an internal locus of control orientation presents a social relationship dilemma for females generally, and females in competitive-achievement situations involving men specifically. These difficulties may eventually result in what Horner (1972) has called "fear of success" in women. That is, by succeeding and accepting the responsibility for their success, young women are in essence threatening men. This, in turn may be perceived as lessening their changes for successful social interaction with these same men--more will be said about this later.

To investigate whether or not these somewhat surprising results were spurious, two additional studies were conducted by the authors and their students. In the first study, Pappas and Nowicki (1972) examined college sophomores from an introductory psychology class and found the same significant set of relationships between locus of control as measured by ANSIE and achievement (females, $\underline{r} = .63$, $\underline{df} = 38$, $\underline{p} < .01$; males, $\underline{r} = -.48$, $\underline{df} = 36$, $\underline{p} < .01$). Once again locus of control scores were found not to be related to SAT scores. In the second study, the present author used college juniors from an introductory psychology class and found a similar set of relationships (females, $\underline{r} = .42$, $\underline{df} = 26$, $\underline{p} < .05$; males, $\underline{r} = -.42$, $\underline{df} = 24$, $\underline{p} < .05$). In all cases Rotter scores were not related to achievement.

On the basis of these three studies, it was tentatively concluded that this differential relationship is a stable one, and is consistent with the notion that externality may be a more culturally approved role for females than for males, and that within a group of verbally-expressed external females there may be a large number of internally behaving females, at

least in terms of academic achievement. This in turn suggests that when investigating achievement behavior in females, one may have to adopt more complex models involving mediational variables.

Al Heilbrun, who has spent a major share of his research life dealing with sex role theory, was not surprised by my "startling" conclusion that female achievement behavior was more difficult to predict than male's. It was his feeling that it is far more difficult generally to predict female than male behavior. With this as background, I would like to consider two possible mediational variables operating between LOC and achievement for females: one old, and one older, but packaged in a new manner. The first is called social desirability, the second, the motive to avoid success.

Earlier in the paper the comparison of the Rotter with the ANSIE scales seemed to suggest that social desirability might be a significant mediator of the locus of control academic achievement relation. To investigate this possibility two studies were done; one with college aged subjects and one with third grade subjects. Borrowing from the jargon of some our political brethren let us take the second study first.

The present author, as well as others, (e.g., McCandless, 1970) believes that females, beginning at a very young age, are socialized into the role of being nurturant, obedient, responsible, and dependent on others in the American society as organized today. These characteristics suggest that behaving in a socially desirable manner may be important for females more than it is for males. If this be the case, the inconsistent results found between locus of control and achievement for females may be due to error introduced as a result of social desirability. The author (Nowicki & Walker, 1973) looked for the achievement-locus of control relation when subjects high in social desirability are separated from those low in social

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desirability. It is proposed that those internal and external subjects with low social desirability scores will behave as one would predict from social learning theory. Thus the internal female should achieve more than the external female when both score low in social desirability.

The subjects for this experiment were white, predominantly middle class third grade students (40 males and 38 females) from a suburban elementary school located in a county bordering a large southern metropolitan area.

The measure of locus of control was the Nowicki-Strickland Personal Reaction Survey for Children (Nowicki & Strickland, 1973).

The Crandall Social Desirability scale (Crandall, Crandall, & Katkovsky, 1965) is a paper and pencil questionnaire for children consisting of 47 questions answered yes or no. This scale has a split-half reliability in the 80's and 90's. For the purposes of the present study a shortened form (all odd numbered items) was used. The test was shortened to minimize the effects of loss of attention for this young age group. Achievement test scores (Stanford Achievement) were obtained from school records.

The group of youngsters taking the Nowicki-Strickland and the modified Crandall Social Desirability scales were told that the experimenter was gathering opinions of different aged youngsters. On the basis of Nowicki-Strickland scores, median splits were made for each sex group. The median for both was the same, 18. The mean of internal scores was 12.66 while the mean of external scores was 23.04. The groups of internals and externals were then further subdivided on the basis of the mean children's social desirability scores. For example, if the social desirability score of a subject in the internal group was above the mean for social desirability scores, he or she was assigned to the internal-low social desirability group.

In this manner, four groups were formed for each sex; internal-low social desirability, external-low social desirability, internal-high social desirability, and external-high social desirability. The external-low social desirability group had the fewest number of subjects, eight. To obtain equal groups, eight subjects were randomly sampled from each of the other groups, with other subjects being discarded.

The results of the analysis of variance computed for achievement test scores indicated significant three-way interaction among sex, locus of control, and social desirability ($F = 5.82$, $df = 1, 56$; $p < .01$). Subsequent analysis of simple effects and Newman-Keuls' procedures indicated that the source of significant effect was among females, with internal females scoring low on the social desirability measure producing achievement scores higher than external females scoring low on the social desirability measure ($\bar{X} = 4.03$, $sd = 1.16$; $\bar{X} = 2.67$, $sd = 1.11$ respectively) as predicted. As a matter of fact, this group of "true" internal females scored significantly higher than any of the other groups in achievement. On the other hand, there was no difference between females scoring high on the social desirability scale or among the male groups.

The results, as hypothesized, suggest that there are two groups of females who attain different levels of achievement within those scoring internally and those scoring externally on the locus of control questionnaire. These groups can be differentiated through the use of a social desirability questionnaire. These results suggest that the relative lack of consistent findings concerning the relationship between achievement and locus of control for females in prior studies may perhaps have been due in part to the failure to obtain groups of "pure" internal and external females. It appears, then,

that social desirability affects confound the achievement, locus of control relation for females.

This same procedure was followed using a sample of college junior year subjects. Subjects completed locus of control and adult social desirability scales. A similar 2 x 2 x 2 analysis of variance for grade point average yielded similar results as found in the third grade sample. Internal females low in social desirability achieved more than all other female groups. This supports the contention that social desirability mediates the locus of control academic achievement relation for females. There is also some indirect evidence to support this conclusion. As part of a study of perceived parental antecedents of locus of control orientation (Nowicki & Segal, 1973), subjects were asked to complete locus of control scales as they thought their parents would. The results from the analysis of the relationship between perceived paternal locus of control and the subjects' behaviors indicated that for males, perceived maternal internality was associated with higher grade point average, while for females, perceived maternal internality was significantly associated with higher scores on the composition achievement test, and perceived paternal internality was significantly related to higher scores on all standardized achievement measures.

Perceived parental LOC orientation, was found to be related more to female than to male academic achievement behavior. In fact, perceived paternal internality was significantly related to all measures of female achievement and in a theoretically consistent manner. This leaves one with the intriguing proposition that, in terms of LOC, one can better predict female academic achievement by asking her to assess her father's locus of control orientation. Why should this be? Of course, there are any number

of explanations available, but one that seems logically sound is that when a female is asked to complete an LOC scale as she perceived her parents would, she is in actuality giving us her true orientation, free of the confounding effects of social desirability and social role expectancy. In social-academic situations it may be difficult for a female to behave in an internal manner even though she may have expressed an internal locus of control on a test instrument. The difficulty derives from the basic incongruity between internal sorts of behavior and the "accepted" female cultural role of passivity and conformity. It has been shown that social desirability can confound the LOC-achievement relation early in the life of females (Nowicki & Walker, 1973), and it may be a more potent (though more subtle) confounder later in life.

Let me briefly note another possible confounding-mediational variable, fear of success. Matina Horner, using a thematic technique, found that women showed a fear of academic success, and that this motive to avoid success was particularly aroused in competitive situations with men. She viewed this variable as being a significant mediator of female academic achievement performance. To investigate the possibility that the motive to avoid success might also be confounding the locus of control-achievement relation, college women from a number of different types of colleges were asked to complete locus of control questionnaires and thematic stimuli measuring the motive to avoid success.

Although results from this work are just now being completed a preliminary analysis of data indicated that internal females with a low fear of success achieved more than any other group. More work of course is needed to test the validity of this variable which up to now has had its greatest

exposure in Good Housekeeping and Mademoiselle. It seems likely though that these two mediating variables, social desirability and fear of success, are important to identifying heretofore unidentified variance in the locus of control-achievement relation. Both variables could be subsumed under sex role expectancies. One final study might shed some additional light on the relation between sex role expectancies and responding to locus of control scales. College subjects (31 males and 36 females) were asked to complete locus of control questionnaires as though he or she were "super male" or "super female." The results are most interesting. With lower scores being more internal: super males had a mean score of 1.78 and super females had a mean score of 22.65. This suggests subjects are sensitive to the sex role implications of responding to LOC items...that to present oneself as internal is to present oneself as male.

I would like to make a few general concluding comments. After being intensely involved with locus of control for all of my research life, I am presently struck with the same feeling I had watching Steve McQueen, in a 1950's monster movie, fight the BLOB. Locus of control research has grown much like the BLOB in an indiscriminate and at times frightening way. It is frightening because Social Learning Theory (SLT) has long been the antithesis of master motive approaches. Yet I am left with the uneasy feeling that locus of control has attained the status of becoming the thing SLT followers opposed, a master motive. Locus of control explains all! Few if any studies involving LOC include the subject's reinforcement value or consider the situation. Instead study after study, relates LOC to a variable with little or no thought to how valued the variable is to the subject, the subject's reinforcement history regarding that variable or how the subject perceives the situation he finds himself in. One last

comment and I'll finish. There is, I believe, a tendency for researchers in the locus of control area to accept locus of control scales as accurately measuring the cognitive construct of locus of control. Crandall in the 1971 APA meeting called for, and I heartily agree, clear conceptualization and stringent measurement techniques. Stephens has pointed out that locus of control scales now in existence may be measuring a "stylistic" rather than a cognitive variable. Gurin and others have introduced the notion that the locus of control construct might best be conceptualized as multi-dimensional rather than unidimensional. These notions suggest to me that there is a crucial need for more convergent and discriminant validity work involving locus of control measuring instruments. That is, work comparing instruments to one another and to important variables. There are cases where LOC should not be related to a behavior and these are as important as the many behaviors to which it is related. When the dust clears, it will be results that are obtained in this systematic manner that will remain useful.

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